

Entry of the amendments is proper under 37 C.F.R. §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issue requiring further search and/or consideration; (c) satisfy a requirement of form asserted in the previous Office Action; and (d) place the application in better form for appeal, should an appeal be necessary. Entry of the amendments is thus respectfully requested.

The Office Action objects to the drawings under 37 C.F.R. §1.83(a) as failing to show every feature of the invention specified in the claims. Specifically, the Office Action alleges that the "frame for supporting said rotor and stator, said frame having a near intake window" in claim 13 is not shown in the figures. The rejection is respectfully traversed.

Applicant asserts that the feature recited in claim 13 is shown in Figs. 1 and 5 as reference number 42a and described on page 5, paragraph [0028] of the specification. Accordingly, Applicant respectfully requests the objection to the drawings be withdrawn.

The Office Action rejects claim 13 under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The rejection is respectfully traversed.

Although Applicant submits that the features of claim 13 are shown in Figs. 1 and 5 and described on page 5, paragraph [0028] of the specification, claim 13 is canceled. Accordingly, the rejection of claim 13 is moot.

The Office Action rejects claim 14 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The rejection is respectfully traversed.

Claim 14 is amended in reply to the rejection. Thus, Applicant respectfully requests the rejection of claim 14 under 35 U.S.C. §112, second paragraph, be withdrawn.

The Office Action rejects claims 1, 2 and 4-14 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 4,926,076 to Nimura et al. (Nimura) in view of U.S. Patent No. 5,686,780 to Adachi et al. (Adachi). As claim 13 is canceled the rejection is moot. Applicant respectfully traverses the rejection of claims 1, 2, 4-12 and 14.

Applicant asserts that neither Nimura or Adachi whether considered singularly or in combination, disclose or suggest all of the features recited in the claims. For example, neither Nimura or Adachi disclose or suggest a vehicle AC generator comprising...a frame for supporting the rotor and stator, the frame having an air intake window for introducing air to the cooling fan, a rear cover fixed to the frame to provide an enclosure between the frame and the rear cover, the rear cover having an air intake window opposite the opening of the frame, a brush-holder disposed in said accommodation space for holding said pair of brushes, said brush-holder having a radially outside surface disposed behind said positive and negative rectifier elements to intersect the cutout section, and a pair of C-shaped positive and negative cooling fins having a common cut out section at a half side of the enclosure thereby forming an accommodation space in the enclosure.

In contrast, Nimura does not disclose or suggest a frame having an air intake window. Rather, in Nimura the air intake windows 19a, 19b are located in the rear cover 19. Additionally, Nimura does not disclose a pair C-shaped positive and negative cooling fins, as recited in the claims. Rather, Nimura discloses "a diode fin 15 carrying diodes" the windows 19a, 19b and the rear cover 19 are for cooling the regulator and the diode fin 15. Diodes 151, 152 and 153 are located in the recesses on the diode fin 15 (Fig. 2, col. 3, lines 12-28).

Even if Nimura discloses a pair of fins, as alleged in the Office Action, such fins would not have a common cut out section. Rather, the cooling fins of Nimura have

respectively different cut out sections in which a connector and a regulator are disposed. Therefore, the cooling air flowing at the first cut out section of the first cooling fin that is disposed at the half side of the enclosure is obstructed by the second cooling fin and be guided at toward the other half of the enclosure where a plurality of rectifier elements are disposed.

Furthermore, although Nimura discloses a brush holders 16, the brush holders 16 are described as "arranged outside the frame pieces 1,1' and are accommodated in a rear cover 19."

In Adachi, the brush holder 69 is disposed in the voltage regulator 6. Thus, neither Nimura nor Adachi disclose a brush holder as recited in claims 1, 2 and 4-14.

The Office Action admits that Nimura does not disclose the feature of an IC regulator having a heat sync disposed in the cooling air passage opposite the air intake window. To overcome the admitted deficiency, the Office Action combines Adachi and alleges that it would have been obvious to one of ordinary skill in the art to combine the IC regulator of Adachi having a heat sync 85 and dispose it in the cooling air passage opposite an air intake window of a rear cover. Applicant asserts that even if Adachi disclosed the features alleged in the Office Action, Adachi does not provide for the deficiencies of Nimura as described above. Accordingly, Applicant respectfully requests the rejection of claims 1, 2 and 4-14 under 35 U.S.C. §103(a) be withdrawn.

Claim 3 is rejected under 35 U.S.C. §103(a) as unpatentable over Nimura in view of Adachi and further in view of U.S. Patent No. 5,093,591 to Kitamura et al. (Kitamura). The rejection is respectfully traversed.

Applicant asserts that claim 3 is allowable for at least its dependency on independent claim 1 for the reasons described above, as well as for the additional features recited therein. Furthermore, even if Adachi discloses the features as alleged in the Office Action, the applied

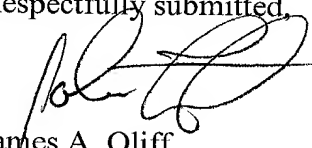
reference does not overcome the deficiencies of Adachi and Nimura as described above.

Accordingly, Applicant respectfully requests the rejection of claim 3 under 35 U.S.C. §103(a) be withdrawn.

In view of the foregoing, reconsideration of the application is requested. It is submitted that the claims as presented herein patentably distinguish over the applied references and fully meet the requirements of 35 U.S.C. §112. Accordingly, allowance of claims 1-12 and 14-16 is respectfully solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number set forth below.

Respectfully submitted,


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APPENDIX

Changes to Claims:

Claim 13 is canceled.

Claims 15 and 16 are added.

The following is a marked-up version of the amended claim(s):

1. (Twice Amended) A vehicle AC generator, comprising:
 - a rotor having a field coil and a cooling fan;
 - a stator having an armature coil;
 - a frame for supporting said rotor and stator, said frame having an air intake window for introducing air to said cooling fan;
 - a rear cover fixed to said frame to provide an enclosure between said frame and said rear cover, said rear cover having an air intake window opposite said opening of said frame;
 - a pair of C-shaped positive and negative cooling fins having a common cutout section at a half side ~~thereof~~ of said enclosure thereby forming an accommodation space ~~between said frame and said rear cover~~ in said enclosure, said cooling fins being fixed to said frame to overlap each other in an axial direction;
 - a plurality of positive and negative rectifier elements respectively fixed to said pair of positive and negative cooling fins at the other half side thereof;
 - a pair of brushes for supplying field current to said rotor;
 - a brush-holder, disposed in said accommodation space, for holding said pair of brushes, said brush-holder having a radially outside surface disposed behind said positive and negative rectifier elements to intersect said cutout section;
 - a connector case having radially outside surface disposed in said accommodation space to intersect said cutout section at a portion radially outside said brush

holder so as to form a cooling air passage directly connecting ~~to~~ said air intake window of said rear cover and said cooling fan ~~between an outer periphery of said brush holder and said connector case~~, said connector case having a terminal for transmitting and receiving electric signals; and

an IC regulator, disposed in said cooling air passage around said connector case to face said rear cover, for controlling output voltage of said armature coil, said IC regulator having a heatsink disposed in said cooling air passage opposite said air intake window of said rear cover.

11. (Twice Amended) A vehicle AC generator, comprising:

a rotor having a field coil and a pair of slip rings connected to said field coil;

a stator having an armature coil;

a frame for supporting said rotor and stator;

a rear cover fixed to said frame, said rear cover having an air intake window;

a rectifying unit including a pair of positive and negative cooling fins and a plurality of positive and negative rectifier elements respectively fixed to said pair of positive and negative cooling fins, said pair of cooling fins having a common cutout section at the middle thereof thereby forming an accommodation space between said frame and said rear cover;

a brush unit including a pair of brushes in contact with said pair of slip rings and a brush-holder for holding said pair of brushes, said brush holder being disposed in said accommodation space so that a radially outside surface of said brush-holder intersects said cutout section;

a connector case disposed in said accommodation space on a side of said brush holder behind said rectifier elements so that a radially inside surface of said case intersects said cutout section so as to form a cooling air passage connecting to said air intake window

along said connector case, said connector case having a terminal for transmitting and receiving electric signals; and

an IC regulator, disposed in said cooling air passage around said connector case to face said rear cover, for controlling output voltage of said armature coil, said IC regulator having a heatsink disposed opposite said air intake window of said rear cover.

12. (Twice Amended) A vehicle AC generator, comprising:

a rotor having a field coil and a pair of slip rings connected to said field coil;

a stator having an armature coil;

a frame for supporting said rotor and stator;

a rear cover fixed to said frame, said rear cover having an air intake window;

a rectifying unit including a pair of positive and negative cooling fins and a plurality of positive and negative rectifier elements respectively fixed to said pair of positive and negative cooling fins, said pair of cooling fins having a common cutout section at the middle thereof thereby forming an accommodation space between said frame and said rear cover;

a brush unit including a pair of brushes in contact with said pair of slip rings and a brush-holder for holding said pair of brushes, said brush holder being disposed in said accommodation space so that a radially outside surface of said holder intersects said cutout section;

a connector case disposed in said accommodation space on a side of said brush holder behind said rectifier elements so that a radially inside surface of said case intersects said cutout section, said connector case having a terminal for transmitting and receiving electric signals; and

an IC regulator having a heat sink for controlling output voltage of said armature coil; wherein

said connector case is disposed in said accommodation space so as to form a cooling air passage connecting to said air intake window along said connector case;

said IC regulator is disposed in said cooling air passage around said connector case to face said rear cover; and

said heat sink is disposed in said cooling air passage opposite said air intake window of said rear cover.

14. (Amended) A vehicle AC generator, comprising:

a rotor having a cooling fan;

a stator;

a frame for supporting said rotor and stator;

a rear cover disposed at a rear end of said frame, said rear cover having an air intake window;

a pair of C-shaped cooling fins having a common cutout section at the middle thereof disposed between said frame and said rear cover, thereby forming an accommodation space between said frame and said rear cover;

a plurality of rectifier elements respectively fixed to said pair of cooling fins;

a brush unit disposed in said accommodation space so that a radially outside surface of said unit intersects said cutout section;

a connector case disposed in said accommodation space at a side of said brush unit behind said rectifier elements so that a radially inside surface of said case intersects said cutout section thereby forming a cooling air passage connecting said air intake window and said cooling fan; and

an IC regulator having a heat sink disposed in said cooling air passage.